

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A method of hydrogenating a phenol using carbon dioxide, the method ~~characterized by~~ comprising reacting a phenol and hydrogen together in the presence of a supported rhodium and/or ruthenium catalyst, and ~~using~~ carbon dioxide, so as to hydrogenate the phenol.

Claim 2 (Currently Amended): The method of hydrogenating a phenol according to claim 1, ~~characterized in that~~ wherein the hydrogenation is carried out at a reaction temperature of 20 to 250°C.

Claim 3 (Currently Amended): The method of hydrogenating a phenol according to claim 1 ~~or 2, characterized in that~~ wherein the hydrogenation is carried out at a reaction pressure of 0.2 to 100 MPa.

Claim 4 (Currently Amended): The method of hydrogenating a phenol according to ~~any of claims 1 through 3, characterized in that~~ claim 1, wherein at least one type of supported catalyst selected from an activated charcoal-supported rhodium catalyst, an alumina-supported rhodium catalyst and an activated charcoal-supported ruthenium catalyst is used as the catalyst.

Claim 5 (Currently Amended): The method of hydrogenating a phenol according to ~~any of claims 1 through 4, characterized in that~~ claim 1, wherein carbon dioxide having a temperature of 20 to 250°C and a pressure of 0.1 to 50 MPa is used as the carbon dioxide.

Claim 6 (Currently Amended): The method of hydrogenating a phenol according to ~~any of claims 1 through 5, characterized in that~~ claim 1, wherein hydrogen under conditions of a temperature of 20 to 250°C and a pressure of 0.1 to 50 MPa is used.

Claim 7 (Currently Amended): The method of hydrogenating a phenol according to ~~any of claims 1 through 6, characterized in that~~ claim 1, wherein supercritical carbon dioxide is used as the carbon dioxide.

Claim 8 (Currently Amended): The method of hydrogenating a phenol according to ~~any of claims 1 through 7, characterized in that~~ claim 1, wherein the hydrogen pressure and the carbon dioxide pressure are adjusted in the presence of the phenol so as to control the conversion ratio of the phenol and/or the selectivities for the phenol hydrogenation products.

Claim 9 (Currently Amended): The method of hydrogenating a phenol according to ~~any of claims 1 through 8, characterized in that~~ claim 1, wherein the hydrogen pressure and the carbon dioxide pressure are adjusted in the absence of the phenol so as to hydrogenate a cyclohexanone derivative and control the selectivities for the phenol hydrogenation products.

Claim 10 (Currently Amended): The method of hydrogenating a phenol according to ~~any of claims 1 through 9, characterized in that~~ claim 1, wherein after the conversion ratio of the phenol has reached 100%, the hydrogen pressure and the carbon dioxide pressure are adjusted so as to control the selectivities for the phenol hydrogenation products.

Claim 11 (Currently Amended): The method of hydrogenating a phenol according to ~~any of claims 1 through 10, characterized in that~~ claim 1, wherein phenol or cresol is used as the phenol.

Claim 12 (Currently Amended): The method of hydrogenating a phenol according to claim 11, ~~characterized in that~~ wherein cresol comprising at least one of meta-cresol, ortho-cresol and para-cresol is used as the cresol.

Claim 13 (Currently Amended): The method of hydrogenating a phenol according to ~~any of claims 1 through 10, characterized in that~~ claim 1, wherein naphthol is used as the phenol.

Claim 14 (Currently Amended): The method of hydrogenating a phenol according to ~~any of claims 1 through 13, characterized in that~~ claim 1, wherein each of the phenol hydrogenation products is a cyclohexanone derivative or a cyclohexanol derivative.

Claim 15 (Currently Amended): The method of hydrogenating a phenol according to claim 14, ~~characterized in that~~ wherein the cyclohexanone derivative is cyclohexanone, meta-methylcyclohexanone, ortho-methylcyclohexanone, para-methylcyclohexanone or tetralone, and the cyclohexanol derivative is cyclohexanol, meta-methylcyclohexanol, ortho-methylcyclohexanol, para-methylcyclohexanol, 1,2,3,4-tetrahydronaphthol, 5,6,7,8-tetrahydronaphthol or decahydronaphthol.

Claim 16 (Currently Amended): A method of hydrogenating a cyclohexanone derivative using carbon dioxide, the method ~~characterized by~~ comprising reacting a

cyclohexanone derivative and hydrogen together in the presence of a supported rhodium and/or ruthenium catalyst, and using carbon dioxide, at a reaction temperature of 20 to 250°C and a reaction pressure of 0.2 to 100 MPa so as to hydrogenate the cyclohexanone derivative.

Claim 17 (Currently Amended): The method of hydrogenating a cyclohexanone derivative according to claim 16, ~~characterized in that~~ wherein the hydrogen pressure and the carbon dioxide pressure are adjusted in the absence of a phenol so as to control the selectivity for a cyclohexanol derivative.

Claim 18 (Currently Amended): The method of hydrogenating a cyclohexanone derivative according to claim 16 ~~or 17, characterized in that~~ wherein the cyclohexanone derivative is cyclohexanone, meta-methylcyclohexanone, ortho-methylcyclohexanone, para-methylcyclohexanone or tetralone, and the cyclohexanol derivative is cyclohexanol, meta-methylcyclohexanol, ortho-methylcyclohexanol, para-methylcyclohexanol, 1,2,3,4-tetrahydronaphthol, 5,6,7,8-tetrahydronaphthol or decahydronaphthol.

Claim 19 (New): The method of hydrogenating a cyclohexanone derivative according to claim 17, wherein the cyclohexanone derivative is cyclohexanone, meta-methylcyclohexanone, ortho-methylcyclohexanone, para-methylcyclohexanone or tetralone, and the cyclohexanol derivative is cyclohexanol, meta-methylcyclohexanol, ortho-methylcyclohexanol, para-methylcyclohexanol, 1,2,3,4-tetrahydronaphthol, 5,6,7,8-tetrahydronaphthol or decahydronaphthol.

Claim 20 (New): The method of hydrogenating a phenol according to claim 1, which is carried out in the absence of a solvent.

DISCUSSION OF THE AMENDMENT

The claims have been amended to delete all multiple claim dependency, and to replace the term “characterized in that” with the equivalent --wherein--.

Claims 1 and 16 have been rewritten without change in claim scope.

New Claims 19 and 20 have been added. Claim 19 is drawn to subject matter deleted by the amendment to Claim 18. Claim 20 is supported in the specification at page 15, lines 22-23.

No new matter is believed to have been added by the above amendment. Claims 1-20 are now pending in the application.